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SCIENCE

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THE SECOND INTERNATIONAL CONVENTION OF THE INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE, LONDON, 1910¹

BEFORE giving an account of the second International Convention of the International Catalogue of Scientific Literature it will be necessary to briefly review the history of the enterprise and outline its organization. Secretary Henry, of the Smithsonian Institution in 1855, suggested and attempted to establish a Catalogue of Scientific Literature through international cooperation; his efforts, however, were not successful and it was not until the beginning of the publication of the Catalogue of Scientific Papers by the Royal Society in 1882 that his idea was even partly carried into effect. This catalogue continued until 1894 when the Royal Society realized that the task was impossible for any one society or indeed for any one nation to undertake. The Royal Society then through the British Foreign Office called the attention of the governments of the world to the great need of a catalogue of current scientific publications, with the result that an international conference was held in London in 1896 to which twenty-three governments sent delegates, the United States being represented by Dr. John S. Billings and Professor Simon Newcomb. This conference decided that it was both necessary and desirable to begin the publication of a catalogue of scientific literature. Various committees were appointed to consider the numerous questions involved, and a general plan of organization was outlined. A second con-

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¹ Read at the general meeting of the American Philosophical Society, Philadelphia, April 20, 1911.

ference was held in London in 1898, Dr. Cyrus Adler, of the Smithsonian Institution representing the United States; and a third conference met in 1900. The various plans formulated at these conferences were definitely agreed to and drafts of schedules of classification, the heart of the whole system, were compiled. The organization is briefly this: all the principal countries of the world, at present numbering thirty-two, undertake to prepare at their own expense a classified index of the current scientific papers published within their domain and to forward the data to a central bureau in London where it is assembled and published in seventeen annual volumes, one for each of the following named subjects: Mathematics, mechanics, physics, chemistry, astronomy, meteorology, mineralogy, geology, physical geography, paleontology, general biology, botany, zoology, human anatomy, anthropology, physiology and bacteriology. The cost of maintaining the central bureau and of printing the catalogue is defrayed entirely by funds received from the subscribers to the work. The regional bureaus are, as a rule, maintained by direct governmental grants. The work began with an index of the literature for the year 1901. Supreme control of the catalogue is vested in a body known as the international convention which met in 1905, in 1910, thereafter to meet every ten years. This paper is for the purpose of giving an outline of the proceedings of the second convention held in London July 12 and 13, 1910. The event was looked forward to with much interest as the enterprise would then have passed through its formative period and the reports would show to what extent it had become a success. All of the principal countries of the world sent delegates as follows:

Austria, Dr. Josef Donabaum (vice-director of the Imperial Royal Court Library,

Vienna); *Belgium*, Mons. H. La Fontaine (director of the International Office of Bibliography, Brussels) and Mons. Paul Otlet (secretary-general of the International Office of Bibliography, Brussels); *Denmark*, Dr. Martin Knudsen (Copenhagen); *France*, Dr. J. Deniker (librarian of the Museum of Natural History, Paris); *Germany*, Professor O. Uhlworm (director of the German Regional Bureau); *Holland*, Professor D. J. Korteweg (University of Amsterdam); *India*, Lt.-Col. D. Prain, F. R. S. (director of the Royal Botanic Gardens, Kew) and Mr. L. H. Burkill; *Italy*, Professor R. Nasini (University of Pisa) and Cav. E. Mancini (Academy of Sciences, Rome); *Japan*, Professor Joji Sakurai (University of Tokyo); *New South Wales*, Professor A. Liversidge, F. R. S.; *Russia*, Mons. E. Heintz (scientific secretary of the Central Physical Observatory, St. Petersburg); *South Australia*, Hon. A. A. Kirkpatrick (agent-general for South Australia); *Sweden*, Dr. Aksel Andersson (first librarian of the Royal University Library of Uppsala); *United Kingdom*, Sir Archibald Geikie, president Royal Society, Sir Joseph Larmor, secretary Royal Society, and Professor H. E. Armstrong, F. R. S.; *United States*, Leonard C. Gunnell (United States Regional Bureau, Smithsonian Institution).

Mr. A. B. Kempe, treasurer of the Royal Society and Dr. P. Chalmers Mitchell, member of the Executive Committee, were invited to take part in the convention as was also Dr. H. Forster Morley, who has since the beginning of the enterprise acted as director of the London Central Bureau.

At the opening meeting held in the rooms of the Royal Society on July 12, Sir Archibald Geikie, president of the Royal Society, was elected chairman and Professor Henry E. Armstrong, fellow of the Royal Society, vice-chairman. Professor

Armstrong is the Nestor of the enterprise and from the beginning of the work has been one of the members of the International Council and chairman of the executive committee. Secretaries for the official languages of the catalogue—French, German, Italian and English—were then appointed. After an address of welcome by Sir Archibald Geikie and the announcement of a number of hospitable invitations to the delegates, the report of the executive committee was laid before the convention. This report formed the basis of most of the discussions that followed and to save repetition its contents will be referred to or quoted in full while reporting the proceedings of the convention.

The report stated that the seven annual issues already published had cost the central bureau \$257,980, for which \$246,410 had been received. The size of the first four annual issues had averaged 8,441 pages each, the fifth and sixth issues averaged 10,417 each, the seventh issue contained 9,219 pages. The enlargement of the fifth and sixth issues was due to the fact that the various bureaus owing to improved methods had begun indexing journals not previously included in the work. When the International Council met in June, 1909, it was decided to use modified titles in the subject index with the result that the seventh issue showed a marked decrease in size and it was estimated that the eighth issue would show an even greater reduction. In 1900 it was estimated that the gross income would be \$27,500 which it was thought would cover the cost of an edition of 500 copies if each issue comprised not more than 160,000 entries. The annual income has been \$35,000 while the cost has been \$36,855. The increased cost was due to the increased size of the catalogue and also to the fact that a thousand copies instead of five hundred had been

printed. The working capital needed was larger than originally estimated amounting to a total of \$37,500 advanced by the Royal Society on all of which interest is paid. It was stated that if the steps already taken were continued the deficit could probably be cancelled, and if the first ten issues could thus be published without loss that in consideration of the extent and difficulty of the enterprise the result would be most satisfactory. Foundations having thus been laid for an international organization of great importance and influence it was thought essential that steps be taken to make the existence of the organization better known and its powers of usefulness more fully appreciated.

A general discussion of methods looking to reduction of expense then followed taking up among other questions the comparative cost of printing in England and other countries. This led to a discussion of the finances of the whole enterprise and the result of the debate may be summed up as follows:

That it was necessary to reduce the size of the printed volumes without limiting their usefulness which might be accomplished by revising somewhat the classification schedules so as to reduce the number of cross references and also by abbreviating the references in the subject catalogue. Emphasis was laid upon the desirability of consolidating the International Catalogue with other bodies engaged in the preparation of bibliographies of scientific works, thus following a precedent established in 1905 when the Zoological Society of London agreed to cooperate with the International Catalogue in the preparation and publication of the *Zoological Record*. Dr. Chalmers Mitchell, secretary of the Zoological Society, on being asked by Sir Archibald Geikie what the saving of expense had been by this fusion of in-

terests replied that the *Zoological Record* when published by the Zoological Society did not pay at all, for it had been prepared by a few zealous specialists who were content with a very small remuneration and the Zoological Society had been willing to bear the expense. When the two works were combined in 1905 the Zoological Society did not attempt to reduce the total cost of the *Record* but in fact increased the rate of pay to the compilers. He stated that for many reasons it was quite necessary that the fusion should take place, that the combined volume was very much better than the separate publications had been, and that it would have been impossible to keep the *Record* going but for the fusion that had taken place. The advantage of amalgamation lay rather in the concentration of effort than in financial saving. Sir Archibald Geikie asked if there had been any real difficulties in the combined arrangement, thinking that the fusion was an example of what might be done with other societies. As Professor Armstrong and Dr. Chalmers Mitchell had been the means of bringing about the consolidation, Dr. Chalmers Mitchell's answer is significant. He said:

The fusion has taken place, and Professor Armstrong I think will corroborate me in this; we who know the immense difficulties at every stage, know quite well that if the *Zoological Record* could be fused with the International Catalogue Record, then it must be a very easy task to fuse any two other records.

The following resolution was then discussed and agreed to.

Resolved, That in view of the success already achieved by the International Catalogue of Scientific Literature and the great importance of the objects promoted by it, it is imperative to continue the publication of the Catalogue at least during the period 1911-15 and on recommendation of the International Council during the subsequent five years 1916-20.

Following this it was

Resolved, That in view of the resolution arrived at to continue the Catalogue for a further period of five years the Royal Society of London be requested to act as in the past as the publishing body and to make the necessary contracts.

Dr. Forster Morley was reappointed director of the catalogue and the international convention was authorized to spend annually the sum of \$10,000, in addition to the director's salary, for the purpose of carrying on the work of the central bureau.

It was then unanimously voted "that it is most desirable that a capital fund should be obtained for the catalogue." It is now apparent that the lack of a capital fund has been the stumbling-block of the undertaking from the beginning. Not only has it been necessary to borrow money on which interest must be paid but lack of sufficient income has rendered it impossible to carry out several plans looking to the general improvement of the work. Had a capital fund been established in the beginning of the enterprise it would not have been necessary for the subscription price to have been placed at such a high figure, consequently, a larger subscription list could have been expected and a larger edition published at a lower rate to each subscriber. No commercial enterprise can exist without sufficient capital and the publication of a great work such as the International Catalogue should not be considered in any other light than as a business enterprise if it is to be regularly continued. The subscription cost is \$85 per year and experience has shown that if the list could be doubled the cost could be cut almost in half, and if the number of subscribers could be quadrupled a still further reduction in price would be possible. A relatively small endowment yielding an annual income of not more than ten thousand dollars to be placed at the disposal of the cen-

tral bureau would render it possible to make many improvements and also to broaden the scope of the catalogue. The sum needed is so small in comparison with the good that could be accomplished that it would be strange indeed if in these days of large endowments some individual can not be found willing to provide the necessary funds. As the idea of the International Catalogue originated in the United States the writer is encouraged to hope that some American will further add to the credit already given to this country by endowing the now organized body with a sufficient fund to properly carry on and extend the work.

At the session of the convention on July 13 methods of administration likely to come before the International Council and the executive committee before the next meeting of the International Convention in 1920 were discussed. Professor Armstrong emphasized the great need of confining the catalogue to references to original contributions to scientific knowledge and of the desirability of constantly consulting specialists in the several sciences regarding the proper classification of the papers indexed. It was thought that the organization could now claim some measure of authority in dealing with questions connected with the bibliography of science and thus bring about greater uniformity in practise. On account of the almost insurmountable difficulties in dealing with the present vast number of journals included in the work of the catalogue it was agreed that a revised list of journals should be prepared to contain only those of recognized scientific importance and that the regional bureaus should agree to index all scientific papers published in these journals early in the year following their publication. The International Catalogue could thus within the year following the

appearance of a paper publish a full index of its contents. After much discussion this subject was embodied in the following resolution which was unanimously adopted.

Resolved, That each regional bureau be requested to prepare a list of journals in each science which the Catalogue will completely index in the annual issue following the year of publication and that the central bureau be authorized to publish the lists thus prepared.

The publication of this list does not mean that no other journals are to be considered but the list will consist essentially of journals devoted almost exclusively to scientific matters and these journals will therefore be given precedence in the work of the regional bureaus.

To make it possible to carry out this plan to promptly publish future volumes of the catalogue the following resolution was adopted:

That the resolution of the year 1900 authorizing the central bureau to close these volumes at different stated dates, each volume to correspond to the literature of a period of twelve months, be confirmed.

The effect of this resolution will be that the separate volumes of the catalogue will not necessarily cover a whole calendar year but will cover a period of twelve months.

Reference was made in the report of the executive committee to a proposed international scheme for the publication of yearly tables of physical-chemical constants and in this connection a communication from Sir William Ramsay was read written in consequence of a resolution passed at the International Association of Academies in Rome to whom an application for patronage had been sent. In the report of the executive committee it was pointed out that this work had been embraced in the original plan for the catalogue and though it was one of great difficulty it was still the intention to publish such tables in connec-

tion with the International Catalogue. It was thereupon voted:

That it be referred to the executive committee, after consultation with the regional bureaus, to consider and decide as to what steps, if any, can be taken for cooperation with the proposed International Commission for the publication of annual Physical Chemical Tables.

The two following resolutions were then agreed to and as each was presented a general discussion of its merits followed. The final decision of the matter can not be better expressed than by quoting the resolutions in full.

The first was,

Resolved, That a committee be appointed to revise the schedules and to make such other alterations as may be necessary in the form of issue of the Catalogue. That it be an instruction to the committee that, so far as possible, the subject index be confined to abbreviated titles and authors' names and numbers to serve as references to the author index. That it be an instruction to the regional bureaus to have in mind constantly the need of maintaining the Catalogue of minimum bulk. That the committee consist of the executive committee and Dr. Deniker, Dr. Heintz and Professor Korteweg.

The executive committee being Professor H. E. Armstrong, Dr. Horace T. Brown, Professor A. Famintzin, Leonard C. Gunnell, Professor H. McLeod, Dr. P. Chalmers Mitchell, Professor R. Nasini, Professor H. Poincaré, Professor O. Uhlworm.

The second resolution was,

That in view of the resolution adopted unanimously by the representatives of the various countries constituting the convention, desiring the Royal Society to continue its responsibility for the publication of the International Catalogue for a further period, the committee appointed be instructed: (1) To take all possible steps to prevent reduplication by the publication of several annual and similar catalogues and indexes on the same subject, by making arrangements such as those now in force with the Zoological Society of London. (2) To obtain further assistance and cooperation in the preparation of the material of the

Catalogue from the principal scientific societies and academies and the organizations which collect materials for indexing scientific literature.

The question of the publication of a decennial index referred to in the report of the executive committee was discussed and it was decided that on account of the financial difficulties involved unless the sales of the catalogue increased to a considerable extent the publication of the decennial index could not for the present be entertained. The matter was left for the action of the next meeting of the International Council which would be held within the next two years.

However short the time allotted for this subject may be an account would be incomplete without some mention of the numerous and gracious hospitalities extended to the foreign delegates by the Royal Society, the Royal Society Club and individually by the English members of the convention who lost no opportunity to show their guests every possible courtesy and consideration.

LEONARD C. GUNNELL

SMITHSONIAN INSTITUTION,

April 13, 1911

SOME PRUSSIAN EDUCATIONAL DATA

A MINE of statistical information concerning educational conditions in Prussia is Kunze's "Kalendar für das höhere Schulwesen Preussens" (Trewendt und Granier, Breslau), which has been issued annually for seventeen years. The 1910 edition has just made its appearance, and the German press is busy rearranging its data and forming conclusions. The interest which Americans in general show in German education warrants some discussion of its information with regard to Prussian secondary schools.

The steady growth in the population of the country is of course accompanied by an increase in the number of secondary schools. In 1900 there were in Prussia, in all, 564